DOCUMENT RESUME

ED 042 948 AC 008 416

TITLE	The Second Treasury of Techniques for Teaching Adults.
INSTITUTION	National Association for Public Continuing and Adult Education, Washington, D.C.
PUB DATE	70
NOTE	55p.
AVAILABLE FROM	National Association for Public Continuing and Adult Education, 1201 Sixteenth St., N.W., Washington, D.C. 20036 ($2.00, single copy; discount on quantity orders)
EDRS PRICE	EDRS Price MF-$0.25 HC Not Available from EDRS.
DESCRIPTORS	*Adult Students, Communication (Thought Transfer), Community Resources, Disadvantaged Groups, Educational Technology, Evaluation, Guidance, *Individualized Instruction, Listening, *Programed Instruction, *Student Teaching, *Teaching Techniques, Testing

ABSTRACT

Studies have shown that many approaches developed for work with the disadvantaged work as well with adult students at all levels who are learning a variety of subjects and skills. Some of these techniques--programed instruction, students teaching other students, individualization of instruction with free and low-cost materials--are described in this booklet. Also discussed are: lively instruction using educational technology; guidance; listening and person-to-person communication; the town as a teaching tool; and testing and evaluating adult students. (PT)

ED042948

PROCESS WITH MICROFICHE
AND PUBLISHER'S PRICES.
MICROFICHE REPRODUCTION
ONLY.

THE SECOND TREASURY OF TECHNIQUES FOR TEACHING ADULTS

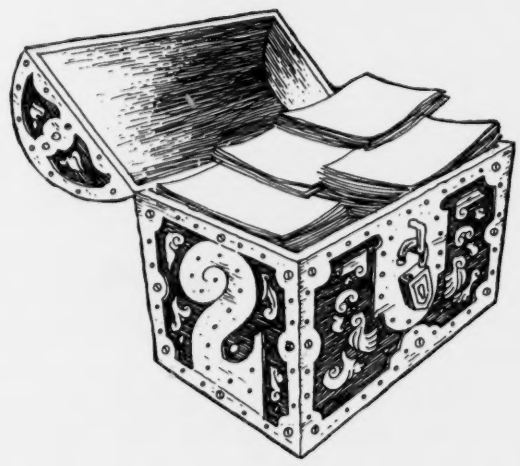
AC008416

Published by the
NATIONAL ASSOCIATION FOR PUBLIC CONTINUING & ADULT EDUCATION

ED042948

PROCESS WITH MICROFICHE
AND PUBLISHER'S PRICES.
MICROFICHE REPRODUCTION
ONLY.

THE SECOND TREASURY OF TECHNIQUES FOR TEACHING ADULTS



Published by the
NATIONAL ASSOCIATION FOR PUBLIC CONTINUING & ADULT EDUCATION

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Permission to reproduce this copyrighted work has been granted to the Educational Resources Information Center (ERIC) and to the organization operating under contract with the Office of Education to reproduce documents included in the ERIC system by means of microfiche only, but this right is not conferred to any users of the microfiche received from the ERIC Document Reproduction Service. Further reproduction of any part requires permission of the copyright owner.

THE SECOND TREASURY OF TECHNIQUES FOR TEACHING ADULTS was edited by Virginia B. Warren.

The material in this handbook appeared originally in issues of *Techniques for Teachers of Adults*, a newsletter published by the National Association for Public Continuing and Adult Education.

Published by the National Association for Public Continuing and Adult Education, a national affiliate of the National Education Association, 1201 Sixteenth St., N.W., Washington, D.C. 20036.

Copyright 1970

Library of Congress Catalog Card Number: 71-129349
Single copy, $2. Discounts on quantity orders, 2-9 copies, 10 percent; 10 or more copies, 20 percent.

TABLE OF CONTENTS

		Page
	INTRODUCTION	v
Chapter I	**Got Opening-Night Jitters? Some Ways to Grab Student Interest During That First Class Session** .	1
Chapter II	**If There Are Disadvantaged Adults In Your Class**	5
Chapter III	**Help Your Students Teach Each Other . . . Sounds Wild—But It Works**	10
Chapter IV	**For Livelier Instruction Plug Into Educational Technology** . .	13
Chapter V	**Programmed Instruction . . . It Solves Many Teaching Problems**	19
Chapter VI	**Individualize Instruction with Free and Low-Cost Materials**	22
Chapter VII	**Guidance—You Can't Avoid It Do You Know How To Give It?**	28
Chapter VIII	**Are They Really Listening?**	32
Chapter IX	**Use Your Town As a Teaching Tool**	38
Chapter X	**Testing and Evaluating Adult Students**	45

INTRODUCTION

Since the first *Treasury of Techniques for Teaching Adults* was published in 1964, a major event has taken place in adult education: *federal funds have been appropriated for adult education classes*, first for adult basic education, through the Economic Opportunity Act late in 1964, and subsequently for adult high school education in 1970.

As a result of this legislation, which was designed to make undereducated adults more capable of coping with their responsibilities, new programs have popped up all over the country.

Research was done to figure out what these educationally disadvantaged men and women need to be taught, and what teaching techniques would work best with them. Workshops were organized, in which experienced teachers of adults shared their knowledge with the army of newcomers to the field. Creative thinking developed new techniques which were then tested and revised.

Out of this ferment of activity and research new insights into adult teaching techniques emerged. Many approaches developed for disadvantaged adults work just as well, it was found, with adult students at all levels who are learning a wide variety of subjects and skills.

Some of these techniques—programmed instruction, students teaching other students, individualization of instruction with free and low-cost materials—are described in this booklet.

We do not say that the approaches described in *The Second Treasury of Techniques for Teaching Adults* are the only ones that would solve your teaching problems. We simply say: here are some techniques which have worked in many situations, which will guide your thinking, and which will help you create more effective methods whether you are a savvy, old hand at the game or a neophyte.

James R. Dorland
Executive Secretary

CHAPTER I

GOT OPENING–NIGHT JITTERS?

Some Ways to Grab Student Interest During That First Class Session

Adult student dropout, most teachers agree, occurs most often and on a large scale early in the course. As one experienced teacher put it, "If you can hold 'em for the first three weeks, you've got it made. Your rate of dropout will be extremely small from then on."

The first class is especially crucial. It tells the student whether the course will be interesting or dull, worth his time or not. First impressions–rightfully or not–are very important. You have to show students, in their very first meeting, that the subject is an interesting one, that you are capable of teaching in an exciting "bring 'em back for more" way, that they themselves can succeed in a school situation (many are very doubtful about this), and that the class climate is warm, friendly, and nonjudgmental.

Unless you know some techniques for pulling this off, you're quite right to have opening-night jitters.

SOME "GETTING TO KNOW YOU" TECHNIQUES

Your initial step–when the first student enters the room–should deal with establishing that warm climate. You can't miss if you stick to the simple FI formula: friendliness and informality. For example, students should be able to move freely around the room as adults, not sit in stiff rows in front of the teacher. When they arrive, naturally they'll probably be silent and reserved. It's up to you to break the ice, introduce people, give them opportunities to get acquainted. They need to know that they can speak up comfortably, that they will be accepted and not criticized, and that they are not alone in the rather frightening role of adult student.

SOME ICEBREAKERS THAT WORK

- If you have movable furniture, move it. You don't get to know people by staring at the backs of their heads. You do get to know them by watching their faces and their reactions to what's going on. One teacher found that simply by asking the students to rearrange the seats in a circle, the cool atmosphere soon changed into a relaxed, friendly one.
- Greet the students at the door as they arrive, introduce yourself, and write each student's name on a card. Shuffle the cards and distribute them in pairs. Have the adults in each twosome interview each other. After the interviews, each student introduces his partner, telling what he learned about him during the interview—his family, where he lives, things he likes to do. This free exchange of information helps put the students at ease. Most people find it easier to tell about persons other than themselves. Wind up by reporting briefly about yourself—your own family, where you live, your hobbies.
- Ask each student to make a short statement telling why he is in class, and record the statements on tape to be played back before the session ends. This way, you get an early insight into their backgrounds and goals while giving them the fun of hearing themselves on tape.
- Introduce each student by name, and ask those who have been in the class before to act as "big brothers" to the newcomers . . . answering their questions, making them feel welcome.
- Try the technique of a teacher of Beginners' English if you have students of many nationalities. She identifies the students: "Here is a man from Hungary, a young woman from Russia, a boy from Germany. We are all here for the same purpose—to learn English." She writes their names and addresses on the chalkboard, and drills the students on the pronunciations. The students appreciate this, because they are often asked for their addresses but cannot be understood.
- Make it clear that class members should help each other, rather than compete. One music teacher explains that all are endowed with varying amounts of talent, time, interest, and energy. By asking each to contribute his particular endowment for the benefit of all, the teacher gives each student a feeling of worthiness and importance. This way students are less likely to fear that they must measure up to a rigid standard of performance.

TEACHING A LESSON IN THE OPENING SESSION

Once a friendly atmosphere has been established and the students feel relatively at ease, don't spend too much time telling what you are going to do. After a quick run-down of the overall goals of the course, get right to work. No amount of telling can ever take the place of doing.

The first lesson should be eminently practical. It should provide the students with a new skill or with a new piece of *usable* knowledge. To them this first experience of actual learning illustrates the nature of your entire course. If, during the first session, they feel they have learned something, they will come back for more. It does not have to be a long, elaborate lesson. It can be as simple as learning where to put their fingers on the typewriter keyboard. The learning experience should have immediate usefulness.

- A silver jewelry teacher begins with a demonstration of various techniques, then starts each student working in silver the very first night. Simplicity of design is stressed, so the article can be completed successfully in a relatively short time.
- Using a language-experience theme is an excellent way to start the learning process in an adult basic education class. The group discusses a topic, such as *Why We Came to Class*, or *Plans for the Next Class*, or any other topic of common interest. As the students make statements on this topic, these are written on the chalkboard by the teacher or a student. Later, the material on the chalkboard is copied, duplicated, and distributed to the class. This theme can be used for later work.
- During the first class session, a teacher of seventh and eighth grade mathematics gives advanced students a new and practical method of "casting out nines," which always arouses their enthusiasm.
- In a first session of a math class, one teacher in a high school completion class asks members of the group to suggest some math problems which they have recently come up against. Learning to solve a few of these problems constitutes the first class session.
- Some teachers have found that lessons in handwriting can easily be developed during the first session and can also be used to get a rough estimate of grade levels. Students at the lower level quickly learn that letters are formed from straight

lines, circles, and curves. The overhead projector is used effectively in teaching this skill. Students enjoy a real feeling of achievement as they write their own names.

WHEN THE FIRST MEETING COMBINES WITH REGISTRATION

Some schools are combining registration with the first class meeting. During the first hour, refreshments are served. The teacher circulates among the students, speaking with each perso and perhaps getting a general idea of why each person is there, what he hopes to get out of the course, and how much work experience, training, background, and knowledge he brings to it.

This provides an ideal opportunity for teacher and student to get to know each other in a relaxed, social atmosphere—one of the most important conditions for establishing an effective, learning situation. In cooperation with the school administrator, the advisory committee might help the teacher organize and publicize the event, as well as help greet the arriving students.

The second half of the session is used for registration. A simple form should be used, but the process should include more than merely securing the names and addresses of those present. Here, too, the teacher shows his interest in and concern for the adult enrollees. If it happens to be a class in adult basic education, the teacher helps where needed and completes the form for those who are unable to read and write. Thus, registration is accomplished in an informal way—a way that does not upset the students as much as a "test." The forms, of course, are studied carefully when future class sessions and student groupings are being planned.

The class ends with a general discussion of what the group may expect and wants to do, and what skills the students may expect to learn during the next session. Instructional materials can be displayed and the students encouraged to wander about, examine them, and ask questions. The teacher points out that films and tapes will be used, field trips made, and student ideas and criticisms encouraged.

A general discussion of field trips, guest speakers and learning activities can be conducted to show students that their ideas are wanted and, if good, will be used. Rules about smoking, parking, use of the school library, whether textbooks and other materials may be taken home, should be stated and the reasons for them discussed during this class session. The students can be reminded of the date and time of the next class, and perhaps invited to bring a friend.

CHAPTER II

IF THERE ARE DISADVANTAGED ADULTS IN YOUR CLASS

Many teachers of adults—not just those in adult basic education—find themselves involved with students from culturally different backgrounds. You may have some in your class, no matter what subject you teach, particularly if you teach parents in an aid-to-dependent children program . . . a consumer course for low-income families . . . a homemaking class in a community center or housing development . . . or a vocational subject.

You will find that your students bring unique problems with them. Many of them have a deep-seated fear, suspicion, or even contempt of schools. They may feel frightened and uneasy with you, their teacher, unable to relax and be themselves without special help.

Adult students frequently have inferiority complexes—particularly when they find themselves in classes with people who are better dressed, who are more confident and energetic, or who appear to have more skills than they have.

The following characteristics are found in most adults from deprived backgrounds. The description of each characteristic is followed by some advice on how to cope with it in the learning situation:

Lack of self-confidence. Because disadvantaged adults have rarely experienced success either as children in school, or in their work and social life since leaving school, they often feel inadequate, unable to learn or compete.

What To Do About It:

It is important for these students to achieve success during the first class session, and at least in some small task in every class session. The learning activities they initially engage in

should not be too difficult. If, for example, they are given reading material too advanced for their reading ability, they will experience that all-too-familiar feeling of failure in school. But, if they have material they can read with ease, or are given tasks they can master rather quickly, they will be encouraged to tackle more difficult tasks in future class meetings.

Fear of school. This fear is a combination of many anxieties: fear of public exposure of their weaknesses and deficiencies . . . fear of ridicule by the teacher or the other students because of their slowness, or inferior clothing . . . fear of being tested . . . fear of being taught information that is noncompatible with what they were taught at home.

What To Do About It:

The need for warm, uncritical acceptance of the undereducated adult's slowness in learning, his offbeat and sometimes dirty clothing, his sometimes shocking language, cannot be overestimated. By commenting on what he has done right, rather than pointing out his mistakes, you can relieve his supersensitive fear of making mistakes and being ridiculed. "Accentuate the positive" is a good slogan to keep in mind when working with disadvantaged adults.

Values, attitudes and goals different from those typical of the middle class. Undereducated adults, in most cases, have values very different from yours. They frequently show indifference or even hostility toward social institutions as, for example, education.

What To Do About It:

It is wiser to ride along with rather than fight these values and attitudes. Strong, overt opposition will not change them—may even reinforce them. Criticism will probably have one result: the student will stop coming to class. Change will come about slowly through exposure to other points of view, and as new and different goals open up to these students. Don't be surprised to find yourself changing, too, as you begin to see the wisdom in some of their values.

Below average scholastic aptitude. While many undereducated adults are of average ability and some are of superior ability, more seem to be below average for academic learning.

What To Do About It:

Try activities that involve "doing" rather than reading or listening. Flash cards, learning games, field trips, role playing, discussions, films, videotapes, programmed textbooks are more effective than traditional methods.

Sensitive to nonverbal communication. With limited vocabulary and limited skill in articulation, most disadvantaged adults are extremely sensitive to nonverbal clues and tend to judge more by actions than by words.

What To Do About It:

Try to be aware, at all times, that you may say one thing verbally, while nonverbally (through your facial expression, gestures, tone of voice) you are saying quite another. When this is the case, the student responds to the nonverbal message because he knows instinctively that it's the real message—not "put-on," as words can be.

Shy about speaking up. These students usually have difficulty in expressing their feelings and needs and standing up for their rights. When you ask them questions about themselves, or about the subject matter, silence does not always mean that they don't know the answer or don't want to give it. It may mean that they are shy about speaking up in groups.

What To Do About It:

One way to encourage shy students to express themselves is to break the class into small groups for discussion. Some people who sit silently in large groups open up and talk freely in a group of two or three.

Hostility toward authority. Because they may have had unhappy experiences with representatives of authority (policemen, bosses on the job, parents who treated them with cruelty or indifference), any authority figure is likely to arouse either hidden or overt hostility. In the students' past experiences, teachers have often represented such authority figures.

What To Do About It:

To cope with this hostility, project yourself as a friend or guide, rather than as a teacher/authoritarian. However, since

these adults—initially at least—seldom view teachers as friends, just acting friendly to them will not immediately reassure them. You may have to run the gamut of hostility and defensiveness for quite a while before your friendliness is seen as honest.

Weak motivation. Disadvantaged adults are easily discouraged and frequently show an attitude of complete resignation to failure. They see little relationship between education and what they want out of life. Because of this approach, and the fact that they don't have to be in class and can leave whenever they like, they constitute a direct challenge to your ability to interest, motivate, and hold them. If class time drags, if the teaching techniques are boring, you may find yourself facing an empty classroom.

What To Do About It:

Though their motivation may be weak, some motivation does exist or they would not have enrolled in your class. Your first step is to find out why each person is there, and what he hopes to get out of the course. This can be done by individual interviews and group discussions. Once you have discovered their goals, you can keep them interested by showing how class activities help them move toward those goals.

Help each student set up subgoals—showing them how each subgoal leads inevitably to the achievement of the main goal. For example, in an adult basic education class when helping adults learn to read such words as "experience," "education," "references," point out that these words are almost always found in job application forms. Being able to read them will help them reach their goal: getting a job.

TESTING THE DISADVANTAGED

Being tested is a fearsome ordeal for many people, but most of all for men and women whose early school experiences were probably linked with failure. Yet, their first visit to adult school may involve being tested for vocational aptitude or reading level. If these tests are administered without understanding of student fears, the student may never come back. So—

- Make sure that the tests are not too hard; if students have some feeling of success while taking the tests, their self-confidence will be strengthened.
- Because this may be the first time some students have taken a test, explanations must be repeated again and again.
- Be prepared to answer patiently the most simple, obvious questions. Your friendly, relaxed attitude will help the students feel comfortable, less threatened by the test situation.
- If possible, avoid using the word "test." Simply describe it as a way of finding out in which group to put them, or in what kind of job they'd do best.

If you are working mainly with disadvantaged adults, you'll find more detailed advice and techniques in the following publication:

Ulmer, Curtis. *Teaching the Disadvantaged Adult.* National Association for Public Continuing and Adult Education. Washington, D.C., 1969. 97 pp. $2.

CHAPTER III

HELP YOUR STUDENTS TEACH EACH OTHER

Sounds Wild—But It Works

Students are teaching other students at all levels of education—from first grade on up. And it works. Whether it's a tutoring arrangement, sharing knowledge by working together on projects, or demonstrating a special skill to an entire class—all participants seem to benefit.

Many good things happen when you take the trouble to explore the knowledge of your students, and let them help each other learn.

Here are some of the advantages:

- As a teacher, you are certainly aware of the truth of the statement: "I never learned as much about my subject as I did when I started to teach it." If you have students with some background and knowledge of the subject—either from their jobs or from previous courses they have taken—it will help them tremendously to communicate that knowledge to the rest of the class. They will have to organize what they know . . . to state it simply and clearly . . . to answer questions about it.
- Adult students often lack confidence in themselves, in their knowledge and ability. If you give them opportunities to share their skills and know-how with others, they gain self-assurance. This self-assurance often carries over into a greater confidence in their own ability to learn.
- When the teacher stands back from time to time and lets one or more of the students run the show, the classroom atmosphere becomes more friendly, less formal and restrained.

Learning of the most creative kind is likely to take place in such an atmosphere.

HOW TO DISCOVER STUDENT KNOWLEDGE

You can't very well put student knowledge to work until you know which students have special knowledge and skills. Here's how some teachers "talent scout" their classes:

- "Our woodworking class is usually a coeducational class with students having various skills and aptitudes. When students are introduced, the teacher asks if any have special skills that might be helpful to others. This tends to boost the learning of all class members, because each brings to the group something different. Each individual skill or bit of information is used to the fullest extent throughout the course."
- Many teachers ask students during the first class session to fill out a questionnaire, or write down on a sheet of paper, any work-experience they have had, reading they have done, or previous courses they have attended in the subject in which they've just enrolled.
- One teacher, early in the course, starts a short, general discussion of the topic "How Students Can Help Each Other Learn." During the discussion he gets across some of the values of student teaching . . . and "teases out" from the students any special skills or knowledge they may be able to share.
- Student backgrounds are the important clue, according to a teacher of sociology and government. "Students with foreign backgrounds give the others political, social, cultural comparisons from their first-hand experiences. People who are working in industry give us labor's opinion, and veterans and servicemen give us the attitude of the military. Oldsters like to talk about the good—and not so good—old days. Youngsters air their views on the turmoil with which they're confronted. We keep it vital by rotating leadership roles, keeping it informal, and maintaining a sense of purpose seasoned with a sense of humor."

Advanced students, or those who have taken the course before, can be extremely helpful to beginners.

"When I have a student who knows an area of physics beyond the textbook, I ask him to lecture on it," reports one teacher. His students also bring exhibits, or demonstrate principles in class. "If I find that a student can use a slide rule, I ask him to do calculations which would take too much time if I did them on the board. This interests other students in learning to use the slide rule."

Some students even teach their teachers. One Physical-Fitness-for-Women teacher can now do a back-somersault on the trampoline, thanks to a student who was a former high school gym star. "We are all students and teachers in my class," this teacher says. "The more we share with each other, the more we all learn."

Members of an advanced electronics class serve as consultants for a beginners class—both having the same teacher. The use of advanced students in this way has increased registration and improved the holding power in both classes.

Business courses are frequently attended by individuals who have had some previous business experience. One typing teacher says: "Whenever a situation develops in which one of the students has had experience, I can usually get that person to talk freely about it. This has a twofold result: it gets the person talking to the group and erases feelings of inferiority, and we all benefit by what is being done at other places of business."

DON'T FORGET FORMER STUDENTS

An art or craft teacher is in a particularly favorable position to make use of the background resources and skills of former students. One gemcraft instructor invites all former students who are actively engaged in cutting gems or working in silver at home to show samples of their work, and to talk informally with beginning students. Sharing of ideas and works of art is thus continued from class to class and makes for a large, loyal, and active alumni group.

"Students teaching students," now being hailed as a new, educational technique at lower school levels, has long been used in adult education. Put it to work for you in your next session.

CHAPTER IV

FOR LIVELIER INSTRUCTION—PLUG IN TO EDUCATIONAL TECHNOLOGY

Research shows that learners tend to remember about 30 percent of the information that is orally transmitted . . . that retention is almost twice as great when oral and visual means are used. When oral and visual means are combined with an opportunity to discuss the information with other learners—90 percent of the information is retained.

This is one reason why more audiovisual aids are being used in adult education classes throughout the country. Another reason, equally important, is that adult students demand lively and varied learning activities—or they drop out of class. Today's teacher of adults uses tape recorders, overhead projectors, 8mm films, cassettes, video tape recorders—every available technological resource—to make learning so interesting, so involving, that students don't want to leave: they might miss something.

SLIDE PROJECTORS CAN COME ON STRONG

Slide projectors, so old and familiar in elementary school, are for adults as timely and exciting as the latest news headline typed in cellophane slide and flashed on the screen. The possibilities for use of cellophane, silhouette, clear glass, etched glass, photographic slides, and special transparencies are as limitless as is the imagination of students and teachers.

Adult classes, for example, often include photo enthusiasts who have taken slides of many subject-matter areas. They are happy to show them to the rest of the group. However, the teacher should preview the showing to be sure it will be a solid learning experience for the class. Preparation and follow-up activities should also be planned.

TAPES: A TEACHER'S BEST FRIEND

Tape recorders are among the least expensive of the "hardwares," simple to operate, and tapes can be used again and again. They can help increase the students' ability to listen and speak; they have great versatility. They are, in fact, a multipurpose teaching tool. Here are some ways in which they can make your teaching job easier and more effective:

- Tape a radio or television newscast or panel show, and play it in class to spark a current events discussion. The tape can be stopped at various points for questions and comments.
- Use tapes for self-evaluation . . . to hear yourself as others hear you. Have you any idea how you sound when you're in the classroom? A tape of a class session can be very revealing. Do you talk too much? Talk down to the students? Use sarcasm? Show hostility or bossiness?
- Prepare tapes of dictation at various reading speeds for shorthand/typing students.
- Encourage reading students to make their own self-evaluation tapes. They could read aloud on tapes early in the course and compare these tapes with tapes made weeks later. They'll be delighted with this actual evidence of improvement and will be motivated to keep on studying and trying.
- Have students teach themselves via tapes. They can take turns taping quiz questions, spelling words, vocabulary lists. They'll enjoy playing the teacher role, and it will boost their confidence.
- Develop your own drill tapes on arithmetic facts, on the spelling of words, and on the sounds of letters: consonant and vowel sounds. These remedial and drill tapes could be used by students alone or in small groups, while you work with other students.

TAPE LIBRARIES

Did you know that more than 30,000 taped programs are now available to schools? Their small price: from $1 to $4 for duplicating. You simply send a blank tape to the library, and the name of the program you want put on it. The tape then belongs to you for any use except commercial broadcasting. Programs are available in science, mathematics, social studies, literature. For

titles, write to the tape libraries at the University of Minnesota, and for the DAVI Tape Catalog, to Louis E. Brown, National Center for Audio-Tapes, University of Colorado, Stadium Building, Room 320, Boulder, Colo. 80302.

MOVIES ARE BETTER THAN EVER (If They're 8mm)

There's been much furore lately, among educators, about 8mm film. Here's why: The new 8mm movie projectors are ideal for individual instruction. They use "film loops" that require no threading—you or your students simply pop in a film cartridge and the movie starts. They are ideal for teaching single concepts—a method for operating a drill press, for example. They are inexpensive: cost of a projector is as low as $70, and black-and-white loops can be bought for as little as $65. Approximately 3,000 commercially made loops are now available. Some can be stopped at appropriate points for group discussion . . . or to reduce a task or skill to minute steps which can be grasped easily even by slow learners.

MAKING YOUR OWN 8mm FILM LOOPS

Teacher-made loops are ideal for personalizing and localizing instruction—typing it directly according to the interests and needs of your particular students. All you need is an 8mm camera, a tripod, and several floodlights to make silent films. If you want sound, additional equipment is needed, of course.

You Could Film—

- A student role playing a job interview. He and other class members can watch the film and analyze his strong points and his weak points. The film can be used over and over with different groups, or with the same class, to remind them of what to stress and what to avoid.
- You, another expert, or an advanced student performing a simple task correctly . . . preferably a task that involves several steps in sequence. When showing the film, stop it from time to time and ask students to tell you what step comes next, or to analyze the various skills involved.

- Students in a public speaking class making talks to the group. When the film is viewed by the students, each can point out his own strengths and weaknesses.

Commercial film loops of the following kind are available: documentaries of peoples and cultures; such skill films as lipreading, swimming, conducting an orchestra; step-by-step demonstrations of crafts, domestic, industrial, and technical processes or activities; moving illustrations of such phenomena as a solar eclipse, a chain reaction, a cell division, or the birth of a caterpillar.

Don't forget that 16mm films are still an excellent teaching resource. Investigate the film collection in your school, state university library, or local public library.

STUDENTS SEE THEMSELVES ON VTR

Good as 8mm film is, there is something still better: the video tape recorder or, simply VTR. Instant replay is the secret weapon which makes the video tape recorder so uniquely useful as a teaching tool. You can, for example, record a speech-class student, or a student role playing a job interview. As soon as he finishes, he can see himself on the screen and immediately evaluate his mannerisms, stance, approach—what he did right and wrong. He can immediately redo the talk or interview, correcting his errors. No time delay is needed for processing, the light exposure is self-correcting, and the sound is perfectly coordinated with the picture.

There are other advantages to this relatively new, educational tool. It can record television shows that are broadcast when the class is not in session—and replay them when the group convenes. A drama teacher recorded a TV play and reran it in class so the students could study acting techniques.

It can record guest speakers who visit daytime classes or other adult classes, and replay the speech during your class session. It can also provide "time-lapse" photography: i.e., it shows students their own progress by filming day-by-day or week-by-week performances.

AUDIOVISUAL ERRORS SOME TEACHERS MAKE

Few people question that technological equipment—if properly used—can be a great boost to learning. Yet it is not unusual to

have students emerge from class after a film, recording, or other audiovisual demonstration, with a feeling that nothing really happened . . . that they were exposed to learning that didn't quite take.

What causes this lethargic reaction on the part of students? The presentation seemed to hold their interest. Research has shown that when students see an educational message, as well as hear it, they learn faster and remember longer. What went wrong?

Perhaps you, the teacher, are making one or more of the following mistakes:

- Do you go on picture-showing binges? Have you been guilty of showing several complete filmstrips, sets of 2" x 2" slides, or several moving pictures, during one class session?
- Do you fail to prepare students in advance for what they will be seeing . . . what they can expect to get out of it?
- Do you expect students to understand a film, picture, or chart just because they look at it? (A picture is not necessarily worth a thousand words—and some explanation may be required.)
- Do you fail to follow each demonstration with an explanation of points not understood, and a check of what has been learned?
- Do you sometimes fail to give students an opportunity to ask questions and discuss what they have seen or heard?
- Are you guilty of thinking that because a film is somewhat related to your subject, it is useful for the class to see? (A film on the lumber industry may be of little practical value to students in a woodworking class. They'll feel short-changed.)
- Do you ever commit the sin of failing to preview a film or filmstrip before showing it to your class?
- Are you guilty of relying on tired, old audiovisual materials, without bothering to discover whether more up-to-date materials are available?
- Do you ever think "It's a terrific film, just what the class needs at this point, but it's only 10 minutes long. I'm not going to bother to set up the projector for such a short showing?"
- Do you ever show a complete film or filmstrip, even though only a small part of it really pertains to what you are teaching?

WHAT RESEARCH SHOWS ABOUT USING TECHNICAL AIDS

According to a UNESCO study, "the effectiveness of the new media is coming more and more to be seen as dependent on the amount of learning activity that goes on at the receiving end . . . it is not productive to think of the media as pouring content into viewers and listeners; a better way is to think of them as *stimulating learning activity* on the part of their viewers and listeners."

Research has also revealed that the following techniques make audiovisual aids more effective:

- If your students know in advance that they will be given a test on the content of a film, they will watch more carefully and learn more. Similarly, if you tell them in advance that the material in a film is important and difficult, their learning is improved.
- Students learn more if they are given an immediate opportunity to practice what they observe in a film, filmstrip, or other audiovisual demonstration. One way to do this is to stop your demonstration at strategic points so students can practice the skill, repeat the new vocabulary words, and the like. Learning is also improved by inserting in films questions designed to increase student participation and motivation.

CHAPTER V

PROGRAMMED INSTRUCTION

It Solves Many Teaching Problems

Whether you teach accounting, bridge, elementary English, American government—or any of hundreds of subjects—programmed instructional materials are available for you and your students. For the fact is—programmed learning *works*—and it's here to stay.

WHAT IS PROGRAMMED INSTRUCTION?

Programmed materials usually appear in the form of "scrambled textbooks" or self-study workbooks. They have these key elements:

- Information is presented in small, bite-size portions, one "bite" at a time.
- The information progresses from simple to more and more difficult.
- Each step in the instructional process requires an immediate response from the student.
- If the student's response is correct, he is directed to go on to the next step. If his answer is wrong, he is directed back for an explanation of his error, and for restudy.

The reason why programmed instruction often has such notable results is this: it gives the student constant opportunities for "instant success." It tells him immediately whether his answer is right or wrong, and—if it's wrong—gives him an *immediate* opportunity to study the material again and redo it successfully. This is particularly good for adults, many of whom have serious doubts about their ability to learn. Programmed instruction proves to them—right on the spot—that they *can* learn.

Programmed instructional material allows each student to proceed at his own pace. (This is particularly useful when you

have heterogeneous grouping—adults with a wide range of knowledge and ability.) They take over many of the routine and drillmaster roles of the teacher, giving you more time for interpersonal activities with your students, and for giving special help to those who need it. They also provide a step-by-step record of each student's progress—enabling you to monitor his work habits and rate of advancement. You may discover more about each student that you ever knew before.

WHEN TO USE PROGRAMMED MATERIALS

Programmed instruction is not the answer to all your teaching problems—and will never replace the classroom teacher. It does, however, work very well in the following situations:

- *Enrichment.* The more capable members of the class, with good study habits, can use self-tutoring materials on a more advanced level.
- *Review.* Programmed materials can be used before formal instruction begins, to help advanced students refresh their minds on old learning. Or it can be used to summarize instruction before a test.
- *Remedial instruction.* A student who has not responded to regular instruction frequently benefits from programmed learning because of its small steps and immediate reinforcement. The student whose efforts are always topped by more aggressive, verbal students, or the student who is afraid of failure, often does very well with programmed materials because his failures are made in private.

PREPARING STUDENTS FOR PROGRAMMED LEARNING

Because this is relatively a new and unique method of learning for most adults, they will need a special introduction to it. Your enthusiasm about programmed instruction and what it can do for your class will affect their responses to it.

To be sure that the program is neither too easy nor too advanced for the person about to try it, many programs provide pretests. They help you decide whether your students have the necessary background. Your inspection of a program before using it will reveal to you what reading skills, information, and abilities the participants need.

Explain the uniqueness of programmed instruction to the class. They must understand that it is a way of *learning*—not a testing method. When this is made clear, it will reduce any concern they may have about cheating and any worry that they can "fail."

When they begin, watch for signs of learning difficulties. The student should understand that he may make a few errors, but if he makes many errors the program is probably unsuited to him. Watch for signs of fatigue, boredom, excessive erasures, unusual patterns in test scores, and student initiative in activities stimulated by the program. These will inform you about each student's progress in the program.

HOW TO SELECT A PROGRAM

You cannot select programmed materials haphazardly. They should be chosen just as carefully as you pick books, films, filmstrips, and other instructional materials. Before using a program you should:

- Read it through carefully until you know it well, then work it through yourself. Only in this way can you really estimate its value, and its relevance to the goals of your students.
- Conduct a preliminary tryout of the program with a few students whose abilities and study habits you know well. They should be typical of the range of differences in your class. Construct a test or activity which you think these students should be able to perform after they have learned what the program claims to teach.
- Have them work through the program, keeping a record of their time, difficulties, and satisfactions. Make clear to them that they are trying out the program for you.
- Look for critical reviews of the program you're considering. Such reviews are beginning to appear in professional journals, along with regular reviews of textbooks. Some include data on achievement attained by using the program, as well as the reviewer's opinion of program content and style.

CHAPTER VI

INDIVIDUALIZE INSTRUCTION WITH FREE AND LOW-COST MATERIALS

Recent work with dropouts, with Job Corps trainees, and with children and adults in the inner cities, has revealed more and more that *instruction fails if it does not appeal to each student's unique interests*.

Much of the disenchantment these people had with school in the first place stemmed from exactly that: it didn't interest them and didn't attempt to interest them.

No matter what subject you teach, you'll do it more effectively if you vary techniques and materials to meet your students' individual needs and interests. This is not always easy. Fortunately, however, there is a gigantic world of free and inexpensive materials to help you individualize your instruction.

FREE MATERIALS AND WHERE TO FIND THEM

Pamphlets, booklets, maps, posters, exhibits, magazines, comic books, charts--even films, tapes, and filmstrips--are available to you without charge. They cover a dazzling variety of subjects, which they approach from many viewpoints. For today's teacher --who finds that textbooks are often obsolete as soon as they are printed--the timely materials produced by associations, business and industry, universities, and government agencies are essential. In fact, these are often the only means with which he can help his students keep up with the new information constantly coming out in their fields of interest.

There are hundreds of sources of free materials. Very likely your school library or public library has lists of sources. One of the best lists is the Educators Progress Service, Randolph, Wis., which publishes guides to free social studies materials, free science materials, free films, and filmstrips. Each cites hundreds of

carefully selected items, along with information on their nature, purpose, and use in the classroom. For sources of low-cost tapes, see chapter IV of this book.

Associations, government agencies, business and industry turn out millions of dollars worth of materials each year which they distribute free on request. Let's take one topic—health—and see where we'd go for free, teaching materials. (Health is the number one interest of many people. One teenage nonreader was lured into reading when the teacher discovered his concern about a wart on his hand and his interest in where warts came from . . . the teacher provided him with reading material on warts, which led him to further reading on health topics!)

First-hand information on health rules, and pamphlets and other materials on how to guard against disease, may be obtained from insurance companies, health agencies of your local government, the U. S. Department of Health, Education, and Welfare, medical associations, drug companies, hospitals, doctors. Contact some of these and you'll be flooded with materials. You'll then be confronted with the problem of how to use them creatively and effectively in your classroom. Here are some ideas to spark your thinking on the use of free materials:

- Pamphlets and booklets can liven your bulletin board with their covers, illustrations, headings. You may want to have a "Free Book Fair," a permanent rack display of free materials for students to pick up and keep.
- Encourage your students to keep small folders in their pockets or purses for reading at odd moments during the day. They can also use free materials when making exhibits or class projects.
- Looking and listening are passive. Help students think of action-steps to take after hearing tapes, or viewing films and filmstrips. A music class, after hearing free folk-music transcriptions, might write a folk song of its own.
- Posters can do more for your students than merely get a message across fast. They'll learn more from a poster if they analyze it and think of other ways to get its message across: other pictures, a different slogan, more effective color or design. As they analyze its message and think of better ways to say it, they are both impressing it on their minds and thinking critically about it.

HOW TO TEACH WITH A NEWSPAPER

Although it is customary to think of a newspaper primarily as a source of information on current events, a good, daily paper offers articles and services which can help students in almost every area of instruction. For example:

In vocational and distributive education classes, reports of activities in business and industry help students in their roles as workers and employers. To make the reading of business news realistic and applicable to the students' lives, set up panels, discussions, and debates. Newspapers can help adults learn some ways in which to look for and apply for a job. Students can become familiar with the classified advertising section. They practice answering ads, using correct business form letters, giving the necessary information, and presenting in a favorable and honest way their qualifications for the job.

The women's section offers teachers many ideas on home management, interior decoration, furniture care, styles and fabrics. Nutrition, menu planning and food purchasing can be taught with the help of features and advertisements. Learning to follow directions, as they appear in recipes and patterns, is a skill women can be taught via the newspaper.

Parent education classes can also use newspaper material profitably. Information about counseling in child care, trends in education, and P-TA activities appear regularly, and can stimulate discussion . . . while promoting awareness of community resources for parents.

Mathematics teachers should not overlook the possibility of using advertisements to teach discount, interest, and percentage in realistic situations. A profitable exercise in gain and loss is frequently made in investment classes, when students invest an imaginary sum of money in a stock and follow its fluctuations on the financial pages. Students can also be taught how to read the graphs and charts which often illustrate economic trends in the daily paper.

Teachers of English can use the reviews of drama, television, and music critics to develop a critical and discriminating attitude in their students. The book reviews can be a guide to the selection of worthwhile reading. Teachers can use reviews to develop reading skills by having students locate factual information about the book and author, identify the opinion expressed by the reviewer, and summarize the value of the book.

The newspaper is a good starting point for word study. Students can use the sports page to locate colorful phrases and vivid writing. Advanced students can study levels of English usage and their appropriateness in various parts of the newspaper. Comic strips, word puzzles, and quizzes may motivate an interest in reading and word study on the part of some students.

A vocational class will be interested in features on hobbies. Most papers carry syndicated columns on contract bridge, stamp collecting, and similar pastimes.

A part of every teacher's job—no matter what his subject—is to help students play a more significant role in community affairs. Daily papers can be very helpful in achieving this goal. Newspapers frequently run series on such topics as mental hospitals, use and abuse of public welfare, urban renewal. Some lead the citizenry in campaigns to correct ills of the community. Many ideas for teaching can develop from such articles. For example, letters of comment to the editor can be a realistic reason for practicing writing in correct form, and with a clear statement of purpose and opinion.

Those who show little concern for current events can be approached through discussions of motion pictures, sports, comics, and personal advice columns. They should not be made to feel embarrassed by their lack of knowledge of current affairs, or they will be unwilling to continue a study that shows their ignorance. Such students must realize that it takes weeks to build a background for comprehension of the news. At this point, the desire to learn is the important element. If all approach the newspaper together, as a mutual learning experience, rapport and interest will be established.

To help readers comprehend the news, newspapers employ experiences to analyze and interpret the news. These interpretive reports stress background material, personalities, relationship to other events, and possible outcomes. Adult students should be given practice in distinguishing news reports from analyses and editorials. A study of the latter is helpful in developing skill to recognize viewpoints, opinion, purpose, slants, and critical function. Editorial opinion, as expressed in political cartoons, can be the basis of interesting discussions.

Most newspapers are eager to cooperate in classroom studies aimed at producing better newspaper readers. When planning a unit of study, ask the circulation or promotion department of your local paper what services and materials are available.

HOW TO USE PAPERBACK BOOKS

There are paperback books for every purpose, to meet every individual student's need and interest, every level of student reading ability. There are approximately 23,000 different titles available in paperback books. There are paperbacks that explain mathematics in simplified terms, tell how to get a job, repair a car, plan a family budget, write a short story.

Needless to say, the paperbacks you use in class must be carefully selected. They must provide useful information and must be neither too difficult nor too simplified for your particular audience. But you'll find it worth the effort. There is something extremely appealing and "pick-up-able" about a small, brightly colored paperback book. One evening school teacher tells about the time he left a paperback copy of *The Return of the Native* lying on top of his desk. Within several weeks the book had been picked up, read and returned by eleven students. Yet the handsome, hardback edition had been languishing, unread, for months on the school library shelf.

Paperbacks are easy for your students to carry around in pocket or purse. They are available everywhere—in drugstores, on newsstands, and in most supermarkets. All these qualities make them extremely tempting, even to men and women who have never entered a public library or a bookstore in their lives.

How do you decide which books would be best for your particular class to read? How do you order and distribute them? Here is a plan some teachers use:

1. Several weeks before you start on a particular aspect of your subject—whether you are teaching English literature, a foreign language, or American government—bring to class five or six paperbacks which you feel would help your students learn more, and which they could easily read and understand.
2. Encourage the class to examine these books. Discuss them with the class. If any students have read any of the books, ask for their opinions.
3. With the help of the students, select one title as required reading for the class. Then place an order with the publisher for enough copies for all the students. Keep a few copies in your desk to lend to students who cannot afford to buy them.
4. If a paperback book is going to be your basic text, or become required reading, your students will get more out of it if you

prepare a study guide. You'll find a sample study guide in *Paperbacks in Schools*, Bantam Books. Make a mimeographed copy of your study guide for every student.

5. Ask friends, neighbors, and students to contribute suitable, used paperback books to your class. Display them on a rack or table for pick-up reading, or ask a student to serve as librarian and keep a record of who borrows the books.

Comic books, too, have been published on a wide variety of positive topics—not just light humor or violence—and their picture-story format is particularly appealing to slow readers. Comic books on such topics as social security, science concepts, child care, can be cut apart and put on the overhead projector. Students can take turns reading them aloud to the class.

For more detailed information on free and low-cost materials for disadvantaged, adult students, see:

Adult Basic Education: A Guide for Teachers and Teacher Trainers, National Association for Public Continuing and Adult Education, Washington, D.C., 1966.

Ohliger, John. *The Mass Media in Adult Education: A Review of Recent Literature*. Eric Clearinghouse on Adult Education, Syracuse, N.Y., 1968. 123 pp.

CHAPTER VII

GUIDANCE—YOU CAN'T AVOID IT

Do You Know How to Give It?

More and more educators see effective teaching today as being predominantly guidance—drawing out, helping, supporting, motivating, counseling—rather than mere fact-feeding.

"Many teachers are now incorporating more guidance methods into their teaching and into their day-by-day student relationships," says the National School Public Relations Association.

Why is this so? For two reasons: 1) educational technology is starting to take over the teacher's traditional role of providing information, and 2) teaching is beginning to be seen as a mutual exploration of a subject by student and teacher . . . not a process in which the teacher provides the answers while the student passively listens. This is especially true in adult education.

Since guidance is such a major part of your teaching job, you need to know the basic techniques of good guidance. There are some practices which guidance experts have found to be successful.

THE TEACHER-STUDENT CONFERENCE

The personal interview is the heart and soul of the guidance process. Conducting a successful student interview takes skill, personal warmth, an honest liking of people and, above all, the ability to *listen*.

It's not always easy to listen. (Ask any psychiatrist.) Productive listening is an art. First, let the student tell his problem in his own way. Draw him out by asking questions that call for more than a "yes" or "no" answer. Help him supplement and clarify his answers. But don't push. Don't talk when you should be listening. A relaxed silence on your part may bring about some indepth thinking on the part of the student.

THINGS TO TRY IN YOUR NEXT INTERVIEW

- Be aware of nonverbal clues. Rejection of the student can be communicated to him by your actions as well as your words. It is therefore extremely important that you control your own facial expressions, gestures, movements even the clearing of your throat. Without a word, you may be saying to the student: "I don't accept you and am not really interested in you." Be watchful, also, for nonverbal clues from him: trembling, twitching, fidgeting, nervous hand movements, and rigidity are tip-offs to emotional tension, high feeling, or embarrassment.
- Use simple language. It is easy to intimidate and alienate students, particularly those in basic education classes, by using words which they don't understand. Use of big words can have two unfortunate results: the student feels stupid because he doesn't know what you're talking about. You the teacher do not know you are not understood because the student is ashamed to tell you so. Communication: zero.
- Ask one question at a time, and make it simple and straightforward. Then wait quietly for an answer. Don't try to answer for him, or finish sentences for him.
- Avoid questions in which the answer is suggested: "Wouldn't you like to read more in your spare time?" Some students may, but this one may not. However, he knows the answer you want and may provide it.
- Keep the interview on the track. Use your questions to keep the conversation channeled in productive directions. Interesting bypaths may occur frequently, but may divert you from the main purpose of the interview.
- Keep it confidential. The quickest and most effective way to destroy a good student-teacher relationship is for the teacher to reveal information given in confidence. Many bits of information make interesting small talk and gossip, but should not be repeated. The spoken word usually gets back to its author—and chances are he'll know it could only have come from you.
- Above all, avoid being critical or judgmental. A critical attitude will not change his behavior. It will, instead, prevent him from seeking help from you again.
- Avoid flat statements telling the student what to do. Instead, make suggestions: "You might want to. . .," "What do you think of. . . ." A good counselor offers choices to the person

he is interviewing. He never uses phrases like "Why don't you . . .," "You should have . . .," "If I were you . . .," and "I think you should . . . ."

HOW A GUIDANCE INTERVIEW MIGHT GO

Let's observe a teacher responding to the following question during a student interview: "How can I learn to concentrate better?"

The teacher could answer with specific suggestions for improving concentration. But this wouldn't uncover the real problem—which may have nothing to do with concentration at all.

The teacher's task, in this case, is to ask questions that will remove the fuzziness around the question, so he and the student can look at the real problem.

He might ask "Why do you say you can't concentrate?" and "Is this true for all kinds of reading, or just the reading you do for this class?" and, "Are there things you want very much to read, but the material seems too difficult?"

Questions like these begin to narrow down the general problem to a more specific area in which the teacher can offer suggestions that will really be helpful.

After the outside wrappings are removed from the problem—in an atmosphere of warmth and acceptance—it may turn out that the student has difficulty reading at the first-class level. He may never have made this embarrassing admission. His way of avoiding embarrassment was to say "I have trouble concentrating."

The teacher is now in a position to offer a variety of possible solutions for the real problem: the student's reading difficulties.

SOME CUES TO CAREER COUNSELING

The shifting patterns of today's working world—resulting from automation and the diminishing number of low-skilled jobs—have made more and more adults seek advice on what jobs to train for and what education they'll need.

They need help in establishing realistic vocational and educational goals. Many need to find out how and where to look for jobs. Some need guidance in solving personal and family problems that may block their ability to learn, or even to attend class.

Here are some factors to consider when counseling an adult on selection of an occupation:

- The level of general education a job requires.
- The length of time required for specialized training, where the training can be secured, and how much it will cost.
- The level of intelligence of the average person holding that kind of job.
- Special talents and aptitude required.
- Activities most characteristic of the job.
- Average, annual earnings to be expected.
- Relative security of the occupation (is it a growing and expanding field, or one that is being phased out).
- Opportunities for advancement.
- Proportion of job openings to the supply of competent applicants in your locale.

WHEN TO CALL ON THE EXPERTS

From time to time, as you provide guidance for your students, you'll uncover problems which you cannot solve without specialized help. It is not your job to help students solve psychological or psychiatric problems, health problems, or financial and domestic problems of a serious nature. It *is* part of your job to know where to refer them for specialized help . . . to know which local groups or agencies offer services your students may need. It is not a mark of failure on your part to refer troubled students to places better equipped to help them.

Information on testing and evaluation can be found in chapter X.

For further reading on guidance see:

Counseling Educationally Disadvantaged Adults, Indiana State Department of Public Instruction, Division of Adult Education. Indianapolis, Ind., 1968. 153 pp.

Counseling and Interviewing Adult Students, National Association for Public Continuing and Adult Education. Washington, D.C. 24 pp. 50¢.

CHAPTER VIII

ARE THEY REALLY LISTENING?

"In person-to-person communication, as high as 70 percent of the time the receiver does not get what the sender intended," says Don A. Orton, an expert on face-to-face communications. Scott Sutlip, professor of journalism, University of Wisconsin, says: "Forget the idea that you have a receptive audience eagerly awaiting your message. Most persons surround themselves with a shield of preoccupation. Getting through this requires skill, because the same approach will not score a breakthrough with all persons."

Have you ever finished what you thought was a fine lesson presentation, had that inner glow of a job well done, only to check and find that you had reached just a few people? Disheartening, wasn't it? Why did you fail? Quick, easy reasons come to mind but they may not be the right ones.

YOU PROBABLY FAILED TO COMMUNICATE IF:

—you devoted most of your class time to talks, films, other presentations while the students sat back and watched or listened.

—students seldom asked questions or made comments when the presentation ended.

—class discussion was limited to you, the teacher, asking the students questions.

—test papers and quizzes showed that many students didn't seem to understand what you were saying.

—students have little opportunity, other than tests and quizzes, to "say back" what they understood you or the other students to have said.

Experience has shown over and over again that more learning takes place when students have an opportunity to influence the rate of communication ("Would you say that again, Mr. Smith?") . . . to test for meaning ("Is this what you meant by that statement?") . . . to add meaning out of their own background ("My own experience on this has been . . .") . . . and to question not merely for additional facts, but also to test the basic idea itself ("What you say may be true. On the other hand, would you agree that . . .").

A number of scientific "teaching strategies" have been worked out to check student/teacher interaction and its effect on learning. For a "quickie" check of student/teacher interaction in your class, quiz yourself.

WHAT QUESTIONS ARE THEY ASKING?

Questions asked—and not asked—can give you much information about each student, and about your ability to communicate. Do their questions ask you to review matter already covered? Are they obvious bids for attention? Are they searching questions, stimulated by what you have taught? Are they questions indicating that your information is superficial, that the student wants more breadth and depth? Are you asking most of the questions—getting too few questions from the class?

HOW IS YOUR EYE CONTACT?

As you teach, do you constantly sweep the room with your eyes to see how many students are looking at you, and seem interested? Get the habit of looking at each student many times. Watch for the frown, the glazed stare, the preoccupied look. Keep your eye contact every possible moment, and use it to tell how well you're communicating.

WHAT DID YOU DO RIGHT?

When you *do* get through to your students with obvious success, have them help you look back and analyze what went on during that class period. What do the students think moti-

vated them, roused their interest? What did you—or a student—say that set off that lively discussion? Did you break the monotony with a particularly effective film or other audio-visual technique and if so, how did the class get involved? (So many times, they just sit coldly, unresponsively, after a film.)

HAVE YOU CREATED A CLIMATE FOR COMMUNICATION?

Since you are the trained person in the classroom it is up to you, not the students, to open all lines of communication. Once they are open, you and the students must work together to keep them open.

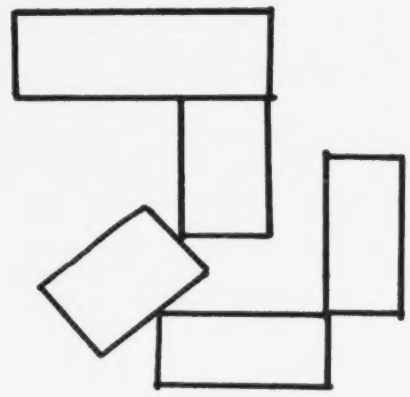
Here are some ways through which you can accomplish this:

- Make the students conscious of the importance of listening, and provide them with some ways of improving their listening habits. Have the students listen for three minutes, then write down all they hear. Have the students compare their results. (See the NAPCAE booklet *How Adults Can Learn More—Faster* for techniques for improving listening.)
- Answer all student questions—even the most obvious—with respect for the feelings of the questioner. Many adult students refrain from asking questions because they think other students already know the answers and will think them stupid for asking. This fear can cut off your communication with students who need your help.

TRY A CLASS "LISTENING EXPERIMENT"

The importance of effective communication between teacher and students can be demonstrated with the following experiment:

Give each student two plain sheets of paper. When they have pencil and papers ready, say: "We're going to demonstrate two different ways of getting ideas across. I have asked Mr. Johnson (one of the students) to come to the front of the room and tell you how to perform a simple task I'd like you to do. He has a sheet of paper on which is a geometric design. Without showing you the design, he will describe it so you can reproduce it on your sheet of paper.



Design #1

To describe this design, Mr. Johnson will probably say something like this: "There are five rectangles on this page. The first is about an inch-and-a-half long. Immediately below it and joined to it is the second one. This is joined at the corner to the third one--etc."

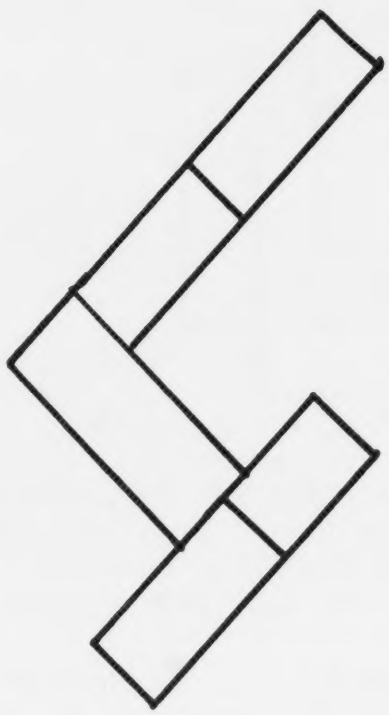
It is almost a foregone conclusion that the "instructor" will run through the description rapidly, assuming that what is clear to him is clear to everyone in the class. He will probably feel quite satisfied about his performance.

At this point ask students to write down how they felt during this part of the demonstration. Were they happy about it? Did they feel that the design they drew was accurate? Ask the student-instructor to write how he felt about his performance.

PART TWO OF THE EXPERIMENT

To get this underway, simply say: "We are now going to demonstrate how this same task is done when communication channels are opened between the person giving the instruction and the members of the audience. This time you may ask Mr. Johnson any questions you like, as he describes the design. The only restriction is that he may not show you the design—he can merely describe it."

Using Design #2, the student-instructor proceeds exactly as he did the first time.



Design #2

However, he will immediately be interrupted by questions and comments: "Slow down a bit, you're going too fast." "Is that near the top of the page, or on the lefthand side?" "Is the rectangle standing on its side; how many degrees is it inclined?" "If the rectangle on its side were the hand of a clock, to which hour would it be pointing?"

As a result of this continuous two-way communication, you can be sure that the students' performance will be considerably improved.

FINAL STEPS OF THE EXPERIMENT

The concluding steps are extremely important in putting across the point of this exercise. Here's what to do:

Step 1. Ask all students to show their first drawings, while you record on the chalkboard how many did the first rectangle correctly, the second correctly, etc. Chances are that few got even the first one correct, much less the others.

Step 2. Ask for a similar show of papers from the second part of the demonstration, and record results on the

chalkboard. You may find that almost every student got the first, second, and third rectangles correct, and the chances of 10 or 12 having all the rectangles in a reasonably correct arrangement are very good indeed.

Step 3. Write on the chalkboard the time consumed for the first demonstration, probably only a few minutes, and the time used for the second one—which probably ran from ten to twelve minutes.

These three steps will show dramatically that, though "back-and-forth" communication takes a little more time, the accuracy of the final product makes it worthwhile.

Last Step, Personal Reactions. Ask the student-instructor to read aloud how he felt during the two separate demonstrations. Chances are that he felt pretty good during the first one. He was in complete command of the situation, had no feelings that the students were critical of him, got the job done quickly, etc. His reactions to the second demonstration will be quite different. He may have felt that some of the students asked stupid questions; he may have been annoyed by interruptions. He probably felt that he worked much harder this time.

Then ask the students to tell how they felt during both demonstrations. You'll find that they felt just the opposite as the instructor. They probably felt very frustrated and upset during the first attempt to reproduce the design. Just as they were trying to get one thought through their heads the instructor would start another, and without any clear notion of what was going on they probably felt the experiment was a failure. They'll report that they felt much better during the second demonstration because they could control their own rates and methods of learning, and could learn from the questions of others.

Moral for teachers: it is easy to stand up and dominate a group with one's own ideas or procedures. It is far more difficult to submit to the pressures of student challenges. But the second way is by far the best if you honestly want to bring about involvement and change in your students.

CHAPTER IX

USE YOUR TOWN AS A TEACHING TOOL

Have you ever stopped to think that when you close your classroom door, with your students snugly inside, you are actually closing them *away* from the richest source of learning there is?

The newest, most forward-looking schools are lifting the "Blackboard Curtain" that separates the classroom from the community. Today's students are spilling out all over—into the neighborhood, the town, the world.

Some students work part-time in business and industry . . . go to school part-time. Some go out and study community conditions--even make movies of them for classroom discussion. Volunteer workers and local experts come into the schools, bringing the world with them in exciting new ways. Some students never enter the school building at all. They meet in storefronts, neighborhood centers, apartment complexes, factories, churches.

Today's schools, more than ever before, are putting students in contact with the world of reality *while they're in school.*

Unless you constantly build bridges between your students' classroom activities and the world outside—they may have some unpleasant surprises ahead of them. There are many ways to bring students into direct contact with the "nitty gritty"—their subjects as they are in "real life."

For example: Would an adult class in mechanics benefit from a visit to a local machine shop or machine manufacturing plant?

Would a public speaking class learn anything of value from a trip through a radio or television station? Or from having a radio announcer as a guest speaker?

Would a class in merchandising profit from a trip through a retail or wholesale outlet?

Can you see any benefits from a talk and demonstration to a sewing class by a department store fabrics buyer?

Is the instructional material used in your electronics class outdated by the rapid technological changes in this field? If so, check with a local electronics firm for up-to-date teaching materials, most of which are available free of charge.

Can your local, public library provide reading material suitable for adults in your basic education class? Would a visit to the library encourage them to do more outside reading?

SOUNDS GREAT–BUT WHERE DO YOU BEGIN?

How do you, an individual teacher, find, contact, and use these resources? The simplest approach is best. Just ask. Turn to the yellow pages of your telephone directory, find the classification in which you are interested and call the place that seems to meet your needs.

If the telephone directory does not list what you need, try the chamber of commerce or equivalent organization in your town. It may keep a list of resources and can help you contact the right person. Some school districts maintain resource listings for the day school, which they would be happy to let the adult school use.

If a community resource workshop has been held in your area recently, you're in luck. The listing they've developed is up-to-date and probably quite complete. Such listings usually include specific information about each resource: whom to contact, times when field trips are welcome, accessibility of guest speakers, etc.

BUSINESS AND INDUSTRY WILL WELCOME YOU

Don't feel hesitant about asking local businessmen as speakers, and requesting films, slides, brochures, field trips, or similar teaching aids. You will probably be surprised to find how willing business and industry in general is to cooperate with the schools in providing these services. Largely, the reason they have not done more in this field is simple: they have never been asked.

If yours is a night class, field trips may be a problem. But don't rule them out completely. Some businesses operate at

night: restaurant kitchens, for example. Many printers are open 24 hours a day and might be willing to have classes visit them in the evening. Other companies may even prefer night-time visits, because less interference is caused with normal daytime activities.

GETTING THE MOST OUT OF FIELD TRIPS

The field trip should offer information that cannot be gained as completely in any other way. If it does not, it is a waste of the students' time. It can have a variety of benefits. It can be an upgrading experience—helping the adults to set new goals and to see these goals as realistic. It can show them new jobs for which they can later compete. It can broaden their horizons with new ideas about working, living, learning, and enjoying.

To be fully effective, a field trip should be carefully planned and organized. It must be directly related to the concepts to be learned; therefore, the teacher himself should make the trip first to make sure it has real, educational significance for the class. Smooth, orderly, and business-like arrangements will make the trip more enjoyable. If possible, school bus or public transportation should be used. Students should be briefed in advance on what to look for, and given time for discussion either immediately after the trip or during the next class session.

It is up to you, the teacher, to tell the community resource how many students will come, what the purpose of their visit is, and whether you think they will learn more from it in small groups or in large groups. You should also advise your students about starting time, dress, cost, method of transportation, address of the place to be visited.

Here are some errors which have often made field trips a waste of time or a problem: the trip was too expensive so the whole class did not participate and follow-up discussion was weakened. The trip was too long, with the result that the students became too tired to learn. Follow-up discussion was not provided after the event, therefore the full learning potential of the trip was not realized.

The following field trips have proven successful. Perhaps they will give you ideas about similar activities for your students:

- Members of a German language class dined together in a German restaurant and did all of their ordering and conversing in that language.
- An adult basic education class visited the office of the Supervisor of Elections in order to register to vote.
- An interior decorating class visited a furniture store for a lecture-demonstration on the construction of "good" versus "inferior" furniture.
- An art class visited a local landmark in order to sketch.
- An investment class visited a brokerage office to see the board.
- A class in practical politics visited the state legislature to clarify points made in class.
- A clothing class went to a fabric store with its instructor to clarify the concept of selecting material suitable for a certain pattern.

FIELD TRIPS IN ADULT BASIC EDUCATION

Many students in basic skills classes have never been out of their own neighborhoods. A field trip can open their eyes to the many opportunities for jobs and enjoyment their city holds for them. Chances are they have never entered the doors of the public library located within a few blocks of their homes.

Whether it is a field trip to a business firm, factory, government building, museum or library, be sure to discuss with the students the job opportunities offered. In addition to the visible jobs, are there "hidden jobs" which the public never sees: custodial, lunchroom, driver, guard, housekeeping staff? What is the pay and what other benefits are offered? Are there any jobs that do not require a high school education? Questions of this kind should be given to the tour guide in advance, so he will have the answers ready when the students are making the tour.

HOW TO SELECT AND USE LOCAL EXPERTS

Experts in many fields are available in your community. They are willing and eager to share their knowledge and experience with your students. Often an outsider can say things to the

class that the teacher cannot; the outsider is believed when the teacher may be doubted, and to the students he personifies an expertness that normally is not associated with the classroom teacher.

Avoid asking questions that cannot be answered adequately in the allotted time. A few, good questions that require some analysis and interpretation of what has been learned–some *thinking* on the part of the students–are better than a lot of questions requiring superficial answers. In essay tests, students should not be able to choose the questions they want to answer. If all participants are not answering the same questions, scoring cannot be fair.

Most important: the questions should be phrased so as to encourage critical and original thinking–not mere rephrasing of information.

When the situation demands that you use standardized tests–make sure they are appropriate ones. When selecting standardized tests, you might start with the following criteria:

1. Content–Does the material avoid "talking down" to the adults who are taking the test? Will they resent the language used?
2. Validity–For what length of time has the test been used, and with what kinds of students? What claims are made for its validity?
3. Directions–Are they clear, concise, easily understood?
4. Scoring–Is it easily and quickly scored? Must the scorer have special training to score the test?
5. Norms–With what kinds of groups have norms been established? If adult norms are not available, is there a correlation with those established for young people?
6. Reliability–What claims of reliability are made by the publisher, and what evidence substantiates these claims?
7. Standardization–What are the bases for the standards the test purports to measure? Are they adult standards?
8. Publisher–What is the reputation of the publisher? Is it noted for good service and reliability?
9. Authors–Who are they and what is their background? Are they well known in their field?

The danger of using a guest expert lies in the failure of the teacher, the students, and the resource person himself to prepare adequately for the visit. The visitor, successful in his own sphere, is invited to your classroom merely on the basis of that of

personal success. However, this success could place a barrier between the speaker and the students unless adequate preparation has been made.

When bringing a specialist into the classroom, there are several things you can do to insure an increase, rather than a decrease, in learning:

- Carefully select a resource person. If you are not personally familiar with his skill as a speaker, find out how well he has been received by other groups.
- Spell out in detail the role you want him to play. Include in your request the topic to be covered, the main points you would like stressed, the amount of time he will have to speak, information about the students who will be hearing him, and what follow-up activity is planned after his presentation and his role in that activity.
- Be explicit about the details of his visit. Tell the date, time, place of the class meeting, how to reach it, and whether parking is available. (Some teachers arrange transportation for the speakers.) Most persons will not expect a fee but make sure there is a mutual understanding on this point.
- Keep in close touch with the guest, once he has agreed to appear. A telephone call could be made to find out whether additional information is required about the assignment, the students, or the points you want covered. You may want to set up a preclass meeting for you and the guest. Frequently this kind of contact helps motivate specialists to plan an excellent presentation. If it is that important to the teacher, it assumes greater importance in the mind of the resource person.
- Enforce ground rules which have been laid down in advance. If a speaker has been given thirty minutes to make a presentation, hold him to it. It need not be embarrassing to the guest if he has been informed that he will be alerted if he runs overtime. However, if the class is obviously interested in the presentation and would like it to go on longer, don't cut it off arbitrarily.
- Find out whether the speaker will need audiovisual materials and equipment, display facilities, a chalkboard, chalk—then, make sure that these are available and in working order.
- Ask the guest to be available for questioning at the end of his presentation. The question period can take on different forms. One way is for the teacher to ask basic questions that

have been drawn up in advance by the class. Some teachers prefer to have the entire class join in the questioning after the main points have been covered.

- A review and discussion of the important things learned from the visitor should be conducted at the next class meeting. This gives an opportunity to evaluate the program, and permits you to make notes on the speaker's effectiveness and the advisability of using his services again.

CHAPTER X

TESTING AND EVALUATING ADULT STUDENTS

Evaluation is important in adult education classes for a variety of reasons.

In a high school credit course, citizenship program, driver training course, formal testing must be done to satisfy the requirements for certificates or other proofs of accomplishment. Tests are given in typing classes to check student speed and accuracy. In reading courses, tests may be given at the start to determine the reading level and regularly thereafter to check progress.

Even in informal classes, evaluation must be done. How else can the teacher discover how well he himself is doing, where his strengths and weaknesses lie, whether students feel the course is meeting their needs, how much learning is actually taking place? Evaluation also helps determine the effectiveness of specific teaching materials and techniques.

BASIC PRINCIPLES OF INFORMAL EVALUATION

Experienced teachers of adults have found that informal evaluation is more successful when the following principles are observed:

Self-appraisal is better than appraisal by outsiders. A thoughtful examination by students of their own progress suggests many points for improvement and stimulates their imagination. Checking or observation by outsiders—even by the teacher—is not as useful in bringing about change as is self-appraisal.

It is often better for students to build their own evaluation tools. Developing instruments of evaluation and applying them to oneself is a self-appraisal activity of a creative kind. If ready-made surveys, checklists, or questionnaires are used, they should be

changed and reshaped by the students to fit their own situations. They should be checked against the students' objectives.

Everyone in the group should be involved in the evaluation process. Part of this process can be done by each student alone, but more suggestions for improvement will come if the entire group is involved in the appraisal.

Comparison with self leads to more growth than comparison with others. Individual abilities and achievements vary so widely that comparisons of one student with another are often invalid and may even be dangerous. What the student needs to know is how well he is achieving his own objectives, rather than how well he stands up against the achievements of others.

EVALUATING YOUR TEACHING

If, sometimes, you wonder whether you are getting your point across, the most natural way to find out is to ask the students. Ten minutes spent in evaluation at the end of each class period could save many hours of guesswork teaching. Try asking your students questions as, "What did you get out of class today?" "How do you feel the class has been going?" "Are there things you would like changed about the way the course is organized?" "Is your thinking about the subject any different than it was when the course began?"

Avoid questions that can be answered with a "yes" or "no." If good ideas come out, tell the class that the ideas are good. If the ideas are not useful, tell the class you appreciate the problem but don't know how you can change the situation. Don't belittle any answer; treat all criticisms with interest and appreciation.

Try inviting a knowledgeable observer to visit your class—not to grade you as an instructor but to help give you an unbiased view of your techniques so you may do a better job. Sitting down with such an observer and going over what he feels about your class can be very rewarding. Don't defend yourself. Just listen and ask questions. No one is a perfect teacher; there are always some things we could do better.

Use an evaluation questionnaire. These can be an eyeopener if the questions are carefully worded to elicit the proper response, and if the students feel free to answer without being identified. A one-page questionnaire with a few, specific questions and space for general comments is usually best. Questionnaires mailed to all students with a stamped, addressed envelope generally yield a high rate of return.

The following suggested questions could be used either in the classroom to kick off general discussion, or could be sent in by mail:

1. Have I increased my fund of information about the subject?
2. Have I developed any new skills? Have I improved skills I already possessed?
3. Have I developed more confidence in my ability to learn?
4. Have I learned better, more efficient ways of studying?
5. Do I feel freer to speak up and make my opinions heard in class?
6. Do I feel confident in my ability to go out and use my new knowledge and skills?
7. Have I changed any of my attitudes as a result of our group discussions?
8. Am I sincerely trying, to the best of my ability, to get all I can out of this course?
9. Have I done outside reading on the subject, or practiced new skills at home, or on the job?
10. Do I feel that I have contributed to the group, helping other students get more out of the course?
11. Do I feel accepted by the group, and do I enjoy working with the other students?
12. Do I feel that the teacher is doing a good job in holding my interest and increasing my knowledge?
13. Do I just sit and listen, or do I propose new ideas, suggest new projects.
14. Am I shy about admitting I don't understand, or do I ask questions?
15. Do I have a tendency to talk too much, not giving others a chance to express their opinions and ideas?

PREPARING YOUR OWN TESTS

It is often more effective to use teacher-prepared tests for adult students. They can be custom-tailored to fit the objectives of particular classes. They can be planned with specific purposes in mind. Nonstandardized tests can a) give the students a chance to practice skills they have learned, b) show you how much students have learned and how well they can express themselves in writing, c) show you where individual students need help, and d) indicate where poor teaching may have occurred.

The winds of change that are sweeping through America's classrooms have affected procedures involved in testing adults—particularly those adults who either fear or are not accustomed to taking traditional written tests.

"Running tests" are particularly effective for adults who fear formal tests, or for those who freeze at the idea of answering a long list of test questions. The teacher prepares a series of test questions (these could include word lists, short quizzes, multiple-choice questions, or any of a variety of approaches). Instead of presenting them to the students all at once, the teacher places one question a day on the chalkboard.

An overhead projector has several advantages in testing adults. It holds their interest because it is different from traditional testing methods, and it provides a change of pace even when written tests are used. Here are some ways in which the overhead projector can be used in testing:

- Art appreciation teachers can project transparencies of great paintings and then ask the students to write down the names of the artists.
- Adult basic education teachers can project pictures of everyday objects, such as buses, household objects, and animals and then ask students to write the name of each object.
- Geography teachers can project a simple outline drawing of a map. They can point to various areas and then ask students to write the names of the places indicated. For example: What mountain range is located here?
- Tape recorders can be used to test student progress in some classes. Foreign language teachers can tape student pronunciations early in the course, then tape students reading the same material several weeks later. Basic education teachers can use the same procedure to test improvement of student speech patterns.

PREPARING MULTIPLE-CHOICE TESTS

A multiple-choice test, in which the student chooses one of four or five plausible answers provided for each question, is the most effective kind of objective test. When preparing such tests, consider the following points:

- State the problem or question clearly so that the students cannot misinterpret its meaning. Avoid weak sentence struc-

ture, dangling constructions, and awkward word arrangements. Do not confuse the issue by asking for more than one piece of information in each question, and limit the answer-choices to a single word or phrase.

- Objective tests can include a wide variety of approaches. They may include questions that require "yes" or "no" answers; sentences in which students provide a missing word, date, or other piece of information; lists of true-false statements.

PREPARING ESSAY TESTS

Essay tests measure the students' ability to organize knowledge and think creatively, rather than report facts they have learned. They help the teacher appraise the students' higher mental processes, limitations and potential. They can reveal originality and creative ability and they require a more complete, interrelated recall of information than the objective test. However they are not an effective way of appraising the mental processes of adults who may not express themselves well on paper.

In preparing essay tests, use questions that include such words as "contrast, compare, justify, explain, criticize, prove." For example, an American history teacher might use the following question: "Give several reasons why people came to this country, and tell how various immigrant groups have affected our present day culture."

If this book has been helpful, you may be interested in other titles published by NAPCAE for teachers and students:

ADMINISTRATION OF CONTINUING EDUCATION
Hardbound, $8 #758-01058
Softbound, $6 #758-01060
TEACHING THE DISADVANTAGED ADULT
Single copy, $2 #751-01062
COUNSELING AND INTERVIEWING ADULT STUDENTS
Single copy, $1 #751-00796
HOW ADULTS CAN LEARN MORE - FASTER
Single copy, $1 #751-00724
TEACHING READING TO ADULTS
Single copy, $1 #751-00704
A TREASURY OF TECHNIQUES FOR TEACHING ADULTS
Single copy, $1 #751-01294
SECOND TREASURY (1970 edition)
Single copy, $2 #751-01380
WHEN YOU'RE TEACHING ADULTS
Single copy, 50¢ #751-00798
IN-SERVICE TRAINING FOR TEACHERS OF ADULTS
Single copy, $1 #751-00728
ADULT BASIC EDUCATION: A GUIDE FOR TEACHERS AND TEACHER TRAINERS
Single copy, $5 #751-01364
IMPACT
Single copy, $1 #751-01298

SOCIAL LIVING SKILLS

CONSUMER EDUCATION
$18 each #388-11828
HEALTH AND NUTRITION
$27 each #388-11830
PRACTICAL GOVERNMENT
$18 each #388-11832

PERIODICALS

PULSE of Public School Adult Education
Annual subscription, $5 #75B
SWAP SHOP for Administrators
Annual subscription, $5 #75A
TECHNIQUES for Teachers of Adults (includes Associate Membership)
Annual subscription, $5 #75C
PUBLIC SCHOOL ADULT EDUCATION ALMANAC
$5 to Associate Members;
$10 to nonmembers #750-01374

Publication discounts on quantity orders of the same title: 2-9 copies, 10 percent; 10 or more copies, 20 percent. Postage will be added to billed orders. Payment must accompany orders of $2 or less.

NAPCAE MEMBERSHIPS

- ACTIVE MEMBERSHIP ($20 a year)

  Members of staffs of publicly supported adult education programs (present or former) and anyone who supports the purpose of the Association, which is to give leadership to the development and implementation of public continuing and adult education, may become active members. Includes subscriptions to PULSE, SWAP SHOP, and TECHNIQUES (annual subscription fee, $5 each).

- ASSOCIATE MEMBERSHIP ($5 a year)

  Membership designed specifically for TEACHERS of adults to acquaint and affiliate them with the Association. Includes subscription to TECHNIQUES ($5 per year).

- SUBSCRIBERS SERVICE ($20 a year)

  Includes subscriptions to all publications and services received by Active Members, except the right to vote and hold office. Anyone may subscribe.

- EMERITUS MEMBERSHIP ($5 a year)

  Open only to former Active Members who have retired. Emeritus Members may attend the annual conference without payment of a registration fee and receive all newsletters, as well as other rights and privileges of the Association except that of holding office.

- INSTITUTIONAL MEMBERSHIP ($50 a year)

  Includes two sets of all regular publications. Each Institutional Member is entitled to designate one individual to represent the institution as an Active Member of the Association.

ERIC Clearinghouse
OCT 19 19/0
on Adult Education

NATIONAL ASSOCIATION FOR PUBLIC CONTINUING & ADULT EDUCATION